Creating Positive Change Through an Integrated Outdoor Adventure Program

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This paper reports on the efficacy of an integrated outdoor adventure program in creating positive change for people with and without disabilities. Utilizing a variety of measurements, this longitudinal study (2½ years) found increases in relationship development, canoeing skills, and several quality of life indicators as a result of participation in a wilderness canoe adventure program. The study also found a maintenance of high positive attitudes toward persons with disabilities over the 2½ year study period.

KEY WORDS: *Integrated Outdoor Adventure, Skill Development, Attitudes, Relationship Development, Lifestyle Changes, Wilderness*

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Wilderness-based adventure recreation programs have grown rapidly in the last three decades as a method of therapy or rehabilitation, personal growth, and production of social benefits (Ewert, 1989). A substantial research effort has paralleled this growth, with a variety of dependent variables being investigated: enhanced self-concept, improved social attitudes and behavior, improved physical health, reduced emotional problems, reduced recidivism, changes in locus of control, reduced trait anxiety, increased integration between people of mixed ability, decrease in stereotypes, and longitudinal effects on lifestyle, to name a few (Ewert, 1989; Hunter, 1987; Kelly, 1993; McAvoy, Schatz, Stutz, Schleien, & Lais, 1989; Schleien, McAvoy, Lais, & Rynders, 1993). Many of the wilderness adventure programs, and the related literature documenting their efficacy, have targeted a specific population, such as adjudicated youth, and included able-bodied participants as staff only and are thus segregated in nature (McAvoy et al., 1989).

There is a small, but growing, number of studies which have investigated the effects of integrated wilderness adventure programs on people with and without disabilities (Edwards & Smith, 1989; McAvoy et al., 1989; Sable, 1995). Integration in other recreation settings has been studied more extensively (Schleien, Ray, & Green, 1997). It is now widely accepted that integration has positive benefits for people with disabilities, as well as people without disabilities. Given the growing evidence on the effectiveness of wilderness programs in creating positive change for participants and the positive effects of integration for people with and without disabilities, it is important to focus research efforts on the effectiveness of integrated outdoor wilderness adventure programs. The purpose of this study was to investigate the efficacy of an integrated outdoor adventure program in creating positive change for people with and without disabilities. This research was part of a larger study that investigated the processes occurring during a wilderness adventure program as well as the resultant outcomes.

Efficacy of Wilderness Adventure Programs

Outdoor adventure experience, as a means of creating positive change, has empirical support for its efficacy (Ewert, 1989). The positive effects of wilderness programs on a variety of participants (e.g., juvenile delinquents, substance abusers, groups of mixed abilities, adolescents with emotional disturbances, psychiatric patients, persons with physical disabilities) have been documented in the literature (Ewert, 1982; Ewert, 1989; Gibson, 1979; Hunter, 1987; Kelly, 1993; Kennedy, 1987; McAvoy et al., 1989; Mobley, Deinema, Rowell, & Bradley, 1985; Teaff & Kablach, 1986; Witman, 1987). The positive changes have occurred in self-concept, self-esteem, trust, group cooperation, skill development, improved health, and more. Less research efforts have focused on the efficacy of integrated outdoor adventure programs.

Three studies in particular are pertinent to this study. McAvoy et al. (1989) studied the effects of integrated wilderness trips on lifestyle traits of adults with and without disabilities using a structured interview following the trip experience. After participation in an integrated wilderness experience, participants reported positive changes in their confidence levels, willingness to take risks, feelings about self, goal-setting abilities, tolerance of stress, and increased ability to approach new situations. Of particular note in this study were the changes that occurred in leisure skill development, attitude, and interpersonal relationships within the integrated group. Participants reported an increase in leisure skills such as wilderness camping and canoeing. Persons without disabilities reported a positive change in attitudes toward persons with disabilities. In addition to attitude changes, persons without disabili-

ties reported a change in their role toward persons with disabilities, from helpers to peers.

In another study, Sable (1995) examined the effects of three different programs, including an integrated outdoor adventure program, on acceptance of individuals with disabilities by children. The results revealed that the integrated outdoor adventure program had a significant impact on increasing positive attitudes toward peers with disabilities.

In a related study, Edwards and Smith (1989) studied children with disabilities in an integrated day camp setting. They investigated social interaction between children with and without disabilities. Results showed that there was an increase in appropriate social interaction between campers with and without disabilities from week one to week two of the program.

Thus, there is a small, but growing number of studies which document the effectiveness of integrated outdoor adventure programs in producing positive change for people with and without disabilities. In particular, there is evidence that attitude and behavior change can occur, resulting in increased acceptance and quality of life for people with disabilities (McAvoy et al., 1989; Sable, 1995). The purpose of this study was to extend the McAvoy et al. (1989) study and examine the positive outcomes that resulted from involvement in integrated outdoor adventure experiences. McAvoy et al. (1989) used structured interviews to ascertain changes following involvement in wilderness trips. Though participants reported an improved attitude, increased interpersonal relationships, and increased outdoor leisure skills, no objective measures of the reported changes were made in the study. The current study addressed the following research questions:

1. Is there an improvement in attitudes toward persons with disabilities following participation in integrated outdoor/wilderness trips?

2. Is there an increase in interpersonal attraction and relationship development between persons with and without disabilities following participation in an outdoor/wilderness trip?

3. Is there a development of leisure skills (i.e., canoe skills) by participants with disabilities?

4. What other positive lifestyle changes do participants report following participation in integrated outdoor adventure experiences?

Methods

Subjects and Setting

Subjects for this study were participants at Wilderness Inquiry (WI) of Minneapolis, Minnesota, which provides outdoor adventure opportunities that integrate people with and without disabilities in wilderness experiences. Persons with a wide variety of disabilities have historically participated in WI trips.

Over the course of the 2 ½ year study, 12 participants with disabilities and 14 participants without disabilities participated in the study. This proportion approximated the usual composition of WI groups, which is structured to include half the participants with disabilities and half without (Wilderness Inquiry, 1992). The sample was selected from a volunteer pool using a stratified random sampling technique to include people with and without disabilities. Volunteers with disabilities were recruited in collaboration with the independent living centers in the state of Minnesota or were people with disabilities who volunteered to be a part of the study when they learned of it through informal networks (e.g., friends, professionals). Subjects without disabilities were randomly selected from a pool of voluntary applicants created by advertising the study within the Minnepolis-St. Paul metropolitan area.

The subjects were assigned to one of two groups using a stratified random sampling technique. Five subjects with disabilities and four subjects without disabilities were randomly assigned to each group. Due to the longitudinal nature of the study, some subjects dropped out and were replaced by others. Thus, the total sample over the course of the study was 26 participants, of which 17 completed the entire study and nine completed part of the study.

The sample of subjects with disabilities ranged in age from 27 to 59 years and included eight males and four females. Disabilities represented in the sample included amputation, ataxia, bipolar disorder, blindness, cerebral palsy, diabetes, epilepsy, hearing impairment, hemiplegia, mental retardation, post traumatic stress disorder, speech impairment, and traumatic brain injury. Five of the subjects with disabilities used wheelchairs. The sample of subjects without disabilities ranged in age from 22 to 65 years and included five males and nine females.

The primary settings for this study were wilderness or backcountry areas in northern Minnesota, Wisconsin, and Iowa, where the canoe trips transpired. Baseline sessions were conducted at parks with lakes throughout the Minneapolis/St. Paul, Minnesota area. WI and the University of Minnesota offices in Minneapolis were used to conduct the quality of life (follow-up) interviews.

Study Design and Procedures

A multiple baseline across groups design was used over the 2½ years of the study (Dattilo, Gast, & Schleien, 1993). In the first year of the study, the two groups formed for the study participated in baseline data collection sessions. Then one group participated in the wilderness trip experiences. In the second year of the study, both groups again participated in baseline data collection sessions, and then both participated in wilderness trip experiences. Within the multiple baseline, an ABAB reversal design was implemented for Group 1. In the ABAB design,

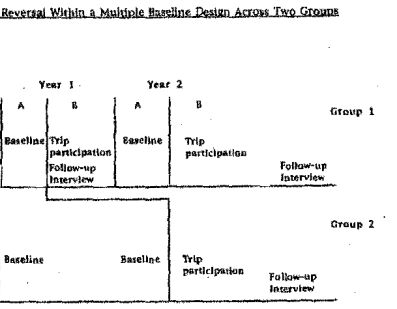


FIGURE 1. AN A-B-A-B REVERSAL WITHIN A MULTIPLE BASELINE DESIGN ACROSS TWO GROUPS

a baseline phase, an intervention phase (trip participation in this study), another baseline phase, followed by another intervention phase were implemented (Tawny & Gast, 1984). This design is depicted in Figure 1. The design was intended to allow the researchers to discern the effects of the intervention with more confidence (Dattilo, Gast, & Schleien, 1993).

Baseline Sessions. Baseline sessions, conducted at metropolitan parks, were used to complete a canoe skills assessment (for subjects with disabilities only), administer an attitude survey, introduce group members to each other, and conduct a short canoe skills lesson and a 2-hour canoeing session.

Wilderness Canoe Trips. In Year 1 of the study, Group 1 participated in a 6-day and 3-day wilderness-based canoe trip. In Year 2, both Groups 1 and 2 participated in 6-day and 3-day trips.

A sociometric assessment was administered to each group prior to the wilderness experience. During the wilderness canoe trips, canoe skills were assessed daily for people with disabilities. At the end of second and fourth trips, the attitude survey and sociometric assessment were administered again.

Follow-up Interviews. Follow-up interview sessions occurred 4 to 6 months following the summer trips. Participants were inter-

viewed separately by trained interviewers in private rooms. Interviews lasted from 30 to 75 minutes and were audiotaped for later transcription. Personnel conducting the interviews included the researchers and graduate assistants in therapeutic recreation. All personnel were trained on how to conduct the structured interview prior to the interview sessions.

Instrumentation

Assessment of Attitudes. Attitudes toward disability were assessed using an adapted version of the Peer Acceptance Scale (Voeltz, 1980; Voeltz, 1982). The scale measures willingness to have contact with individuals with disabilities, actual contact, and deviance consequation, which includes avoidance, teasing, and stereotyping (Voeltz, 1982). The scale was adapted slightly by Schleien and Ray (1988) and McAvoy and Schleien (1988) to be used in recreation settings and outdoor programs with a wider range of ages. Scores on the revised Peer Acceptance Scale could range from 0 to 34, with high scores reflecting a more positive and accepting attitude toward people with disabilities.

Assessment of Relationship Development. Relationship development was measured using a sociometric assessment. The social dimensions that were assessed in this study included: group cohesiveness; group expansiveness; and choice status (Ellis, Forsyth, & Voight, 1983; Schleien, Fahnestock, Green, & Rynders, 1990).

The sociometric assessment instrument consisted of eight criteria to which respondents made choices among the group members. The criteria focused on four types of activities: sharing food with group members; inviting group members to one's own home for a party; having a friendship with other group members; and, canoeing with other group members. The criterion statements were worded to allow subjects to make positive as well as negative choices (e.g., "Which people would you like to be partners with on the canoe trip?" versus "Which people would you not like to be partners with on the canoe trip?").

Assessment of Canoe Skill Acquisition. Canoe skills were chosen as the leisure skill to assess for acquisition because they were used frequently during the trips and allowed for equal participation between people with and without disabilities. Canoe skills were assessed using a task analytic assessment tool (Schleien, Ray, & Green, 1997), which measured 84 distinct canoeing skill tasks. During the trips, one canoe skills assessment was completed each day with each subject with a disability. A researcher conducted the assessment and interrater reliability was checked by using a trained observer (usually one of the trip leaders) on every fifth canoe skills assessment.

Assessment of Perceptions of the Trip Experiences on Quality of Life Areas. Follow-up interviews were conducted 4 to 6 months after the trip experiences with a modified version of an interview protocol developed by McAvoy et al. (1989). The interview protocol obtained information on the impacts that an integrated trip program might have on lifestyles components (leisure, education, employment, mobility level, independent living, and interpersonal relationships); attitudes toward those with and without disabilities, approaching new situations, tolerance of others; and, feelings about integration and the wilderness experience. The interview contained both open-ended and closed-ended questions, as well as a section to which participants responded to a Likert scale on the perceived impact of the trip experiences on lifestyle variables. Two versions were developed: one for participants with disabilities; one for participants without disabilities.

Data Analysis

Analysis of the Peer Acceptance Scale. Mean scores on the attitude survey were graphed in relation to the other variables measured over time (skill acquisition, sociometric assessment) to notice if any trends

were occurring through visual inspection of the data (Dattilo, Gast, & Schleien, 1993). Secondly, the mean scores were compared using a repeated measures analysis of variance (RM ANOVA) (Schutz & Gessaroli, 1987) to determine if there was a significant change in attitude toward persons with disabilities during and following trip participation. A .05 level of significance was used.

Analysis of Sociometric Data. Prior to data analysis, a matrix table was completed for each criterion on each administration of the sociometric assessment. The matrix table is a twofold table which reveals the choices each participant in the group has given and received for a particular criterion (Gronlund, 1959). Choices and rejections for each criterion made by each participant were recorded, mutual choices and rejections were identified, and sums of choices and rejections were computed.

The choice status of each individual in each group was determined. Choice status is defined as the number of times a person is chosen by others in the group divided by the number of people in the group minus one (Ellis, Forsyth, & Voight, 1983). The higher the choice status for an individual, the more that individual was chosen by others. A choice status of 1.0 means that a group member was chosen by all other group members on the criterion being assessed. The choice status of individual group members was graphed over time to look for changes in status in the group.

A group cohesion index and a group expansiveness index were computed for each criterion on each administration of the sociometric assessment. Group cohesion is defined as the ratio of the number of mutual choices group members make to the total number of possible mutual choices in the group. It is an indication of how close the group has become as a whole (Ellis, Forsyth, & Voight, 1983; Gronlund, 1959). The higher the group cohesion index, the more close a group was. Group expansiveness is defined as a willingness to talk or be a part of the group (Ellis, Forsyth, & Voight, 1983). It is obtained by dividing the total number of group choices made by the number of group members. It is an indication of a group's openness to forming relationships. Group cohesion and group expansiveness indices were then graphed to examine changes over time and between the two groups.

Analysis of Canoe Skill Assessment Data. Canoe skills task analytic assessment scores were tabulated for each subject on each probe taken. The percent score was the number of steps of the task analysis completed correctly and independently divided by the total number of possible steps. The scores were then compiled for each group and a mean group score was obtained for each probe. The means for each group were graphed over time (with other repeated measured variables of attitude and sociometric assessment). Visual inspection of the plotted data was used to assess changes in skill level in relation to baseline and trip participation (Dattilo, Gast, & Schleien, 1993). Interrater reliability was determined by using a point-by-point agreement method (Kazdin, 1982).

Analysis of the Follow-up Interview Data. The responses on the Likert scales from the quality of life interview instrument were tabulated for each lifestyle area. The mean responses were graphed by lifestyle areas impacted for comparisons. In addition, the percentage of respondents reporting positive changes for each lifestyle area was computed and graphed for comparisons.

Qualitative data collected in the follow-up interview were analyzed using a modified version of the constant comparison approach (interviews were transcribed and read, coded for categories and subcategories, and a dependability audit conducted) (Glaser & Strauss, 1967).

Results

Results of the Attitude Assessment

Table 1 presents the means on the Peer Acceptance Scale (attitude assessment) for

Table 1.

Pre-Trip and Post-Trip Means on the Peer Acceptance Scale of Subjects who Completed Entire Study

	Pre-Trip			End Year 1			Post-Trip		
	M*	%	N	M*	%	N	M*	%	N
Overall	31.2	91.9%	(17)				31.4	92.4%	(17)
Group One	30.4	89.5%	(9)	29.9	87.8%	(7)	30.9	90.9%	(9)
Group Two	32.1	94.5%	(8)				32.0	94.1%	(8)

* Possible score = 34

Groups 1 and 2. Because of the replacement of subjects in the sample over time, it was not possible to include the scores from the Peer Acceptance Scale from the measurement taken at the end of Year 1. These interim mean scores were graphed for visual inspection (see Figure 2), but not treated statistically due to missing data and empty cells in the RM ANOVA design. In the RM ANOVA, the resulting *F* ratios were not significant for any of the comparisons. There was no significant difference between the pre- and post- attitude assessment scores (df = 1, F = .09, p = .77). There was also no difference between Group 1 and Group 2 on the attitude scores (df = 1, F = 1.84, p = .20). As seen in Table 1 and Figure 2, the subjects had very positive attitudes toward people with disabilities at baseline and their atti-

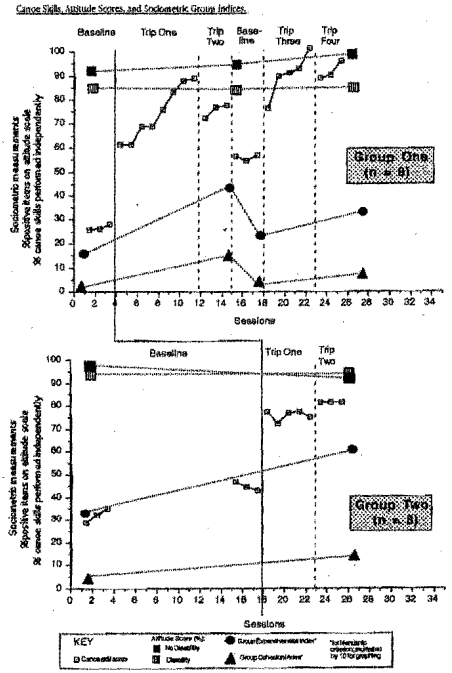
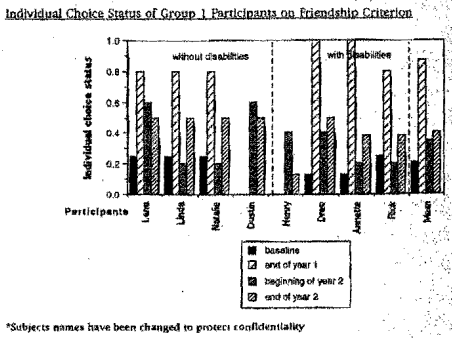


FIGURE 2. CANOE SKILLS, ATTITUDE SCORES, AND SOCIOMETRIC GROUP INDICES.



*Subjects names have been changed to protect confidentiality

FIGURE 3. INDIVIDUAL CHOICE STATUS OF GROUP 1 PARTICIPANTS ON FRIENDSHIP CRITERION

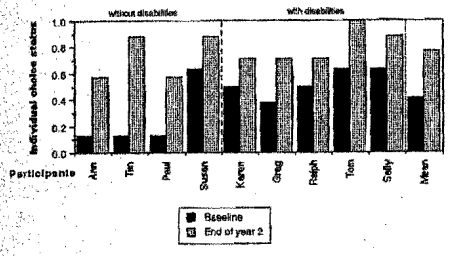


FIGURE 4. INDIVIDUAL CHOICE STATUS OF GROUP 2 PARTICIPANTS ON FRIENDSHIP CRITERION

tudes remained positive by the end of the study.

Results of the Sociometric Assessment

Choice Status. All four criteria on the sociometric assessment showed similar results. Therefore, for the sake of economy, only the results of the friendship criterion will be presented. Figures 3 and 4 depict the results of choice status, which is a reflection of how much a participant is chosen or included by other group members. A choice status of 1.0 implies that the participant was chosen by all group members. Due to loss of subjects over time, only 17 subjects had both baseline and post-data to be graphed over time. As can be seen in both figures, in general, most participants increased in choice status from the baseline to the post-trip measurement. More group members were being chosen as friends by other group members, including participants with disabilities.

Group Cohesion. Figure 2 depicts the results of the group cohesiveness index over time for 17 subjects with pre- and post-data. In general, the two groups became more cohesive by the end of the trip experiences as compared to baseline (Group 1: .07, 1.47, .13, .50; Group 2: .44, 1.29). In Group 1, changes in the cohesiveness index over time reflect the stages of group development often cited in the literature (Jones, 1973). Although Group 2 was more cohesive at baseline than Group 1, both groups gained in cohesiveness by the end of the trips in Year 2.

Group Expansiveness. Figure 2 also shows the changes that occurred in group expansiveness over time across both groups. The higher the group expansiveness index, the more open group members were to including others as friends. Group 1 indices across the four assessments were: 1.63, 4.33, 2.33, 3.22. Group 2 indices across the two assessments were: 3.20, 6.00. As can be seen in the figure, Group 2 was more expansive than Group 1 at baseline. Both groups increased in willingness to include others by the end of the trips in Year 2.

Results of the Canoe Skills Task Analytic Assessment

Results of the canoe skills task analytic assessment, as observed in Figure 2, indicated that participants with disabilities showed a definite acquisition of canoeing skills following participation in the wilderness trips as compared to baseline assessments in both groups. This improvement in canoe skills was maintained from the first to the last trip, with only minimal loss of skills between trips. The multiple baseline design helped to clarify the significant contribution of the WI trips on canoe skill acquisition and maintenance, as evidenced by the change in mastery once trips were started with both groups, as compared to baseline. By the end of the last trip, participants with disabilities in Group 1 were executing 95% of the canoe skills correctly and independently. Participants in Group 2 were executing 82% of the skills correctly and independently by the end of the last trip.

Results of the interrater reliability for the canoe skill task analytic assessment for both groups showed a mean of 90.6% interrater agreement, with a range of 68% to 100%. A total of 99 probes were conducted for Group 1 over the course of the study, with 23 in-

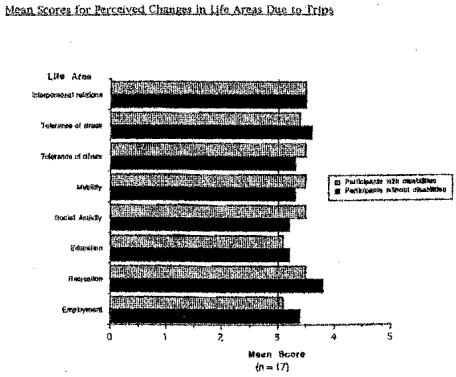


FIGURE 5. MEAN SCORES FOR PERCEIVED CHANGES IN LIFE AREAS DUE TO TRIPS

terrater probes (23% of the probes). For Group 2, 64 probes were completed, with 12 interrater probes (19% of the probes).

Results of the Quality of Life Follow-Up Interviews

Quantitative Results. Participants' perceptions of the impact that the trip experiences had on other areas of their lives are presented in Figure 5. In the figure, each life area is presented with the mean scores from the Likert scale (i.e., 1 = major negative effect; 2 = some negative effect; 3 = no effect; 4 = some positive effect; and, 5 = major positive effect) for participants with and without disabilities. As can be seen in Figure 5, participants perceived some positive impact in most areas listed. The areas of employment, recreation, and tolerance of stress were more positively impacted for participants without disabilities than for those with disabilities. The areas of social activity and interpersonal relations were more positively impacted for people with disabilities than those without. Overall, all of the major life areas assessed were reported as positively impacted by the trip experiences. This can be seen in Figure 6, which displays the average percent of participants with or without disabilities reporting a positive change in each of the life areas.

Qualitative Results. The results of the qualitative interview data are discussed according to the categories and themes that emerged in relation to the research questions. The results of the dependability audit showed strong agreement between the coding of the auditor and the researcher.

Personal changes that participants reported from the trip experiences emerged in five sub-categories. These included attitude change about disability, friendship development, skill development, personal growth and reflection and, lifestyle change. These sub-categories were equally salient for participants with and without disabilities and concurred with the quantitative results of the follow-up interviews.

Attitude Change. In general, the qualitative data supported the results of the quantitative measurement of attitude change. Participants in the study expressed positive attitudes about people with disabilities whether they had a disability or not.

A participant who was blind stated,

> It just gave me more exposure, be-

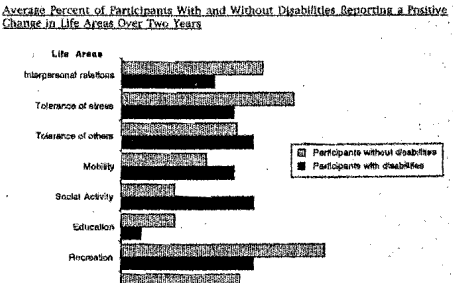


FIGURE 6. AVERAGE PERCENT OF PARTICIPANTS WITH AND WITHOUT DISABILITIES REPORTING A POSITIVE CHANGE IN LIFE AREAS OVER TWO YEARS

cause I don't understand what it's like to have a different disability. It gave me a broader understanding of people and people with disabilities and made me wonder things like, if I had a different disability, how would I motivate or how would I function with that disability. (male, 38 years old)

Two participants without disabilities stated,

It (the trips) gave me a broader perspective. I had a very narrow perspective of what people with disabilities are like . . . I know that even people with the most severe disabilities have preferences, likes, and dislikes. It made me realize again, people are human, and what people with or without disabilities can do it they really want to. If they really have their heart set on something, you can help them find a way to do it. (female, 26 years old)

I have more of a respect, and I'm still trying to think of a way to describe how it opened up a new place of understanding where people are coming from, and also understanding more of what capabilities are even if people are challenged with developmental disabilities, what their social abilities are, how much fun and pleasure and warmth and enjoyment you can share with them. In terms of physical disability, I've gained a little more respect of how people cope with the physical challenge that they have, that diligence of persisting, being very creative about solving that problem . . . Now that when I'm in daily life encountering someone with disabilities, there is just something else that I feel. Just something that wasn't there before. I have a little more inclination to make sure that person is treated fairly, whether it's physical or seeing what the environment is doing to them, more so than I paid attention before. (male, 30 years old)

Friendship Development. Friendship development was a positive outcome of the trip experience for participants with and without disabilities. The following quotes from participants with and without disabilities exemplify how the friendships made with group members impacted other areas of their lives.

The best thing on the trip was associating with Annette and Drew (two participants with mental retardation) because I really don't interact with people with disabilities in my daily life. I've learned more about how two people with disabilities live on a daily basis, but most important I got to know them as people, and I've shared a lot of joyful and warm moments with them. I have a much better grounding in interaction with disabled people than I did before. All the courses or workshops in a workplace for sensitivity training don't mean anything compared to actually developing a relationship with people. (male, 30 years old)

(These trips) put philosophy into practice. Nobody would ever say that integration is bad and that you shouldn't have these kids in your classroom or these employees at your job site, because that's a politically incorrect thing to say. But when it comes right down to it, until you have a personal experience with, until you can put names to a situation, until you can know me as Rick instead of a person with a disability, philosophy doesn't mean anything. (male, 27 years old)

People are just kind of uncomfortable being around people that are a little different than them, especially people with developmental disabilities, that's

Table 2.

Exemplar Quotes for Areas of Personal Growth Experienced by Subjected with and without Disabilities

	Exemplar Quotes	
Area of Personal Growth	**Participants with Disabilities**	**Participants without Disabilities**
Self-confidence	"I learned a lot about being brave in the canoe. After I started being brave, the waves and water were fun. Good experience for me to be in the wilderness." (female, 41 years old, mental retardation) "I think, 'If I can do that, if I can walk along portages, I can do anything.'" (male, 30 years old, mental retardation, blind)	"It made me more, well, as you get older, you think, 'I'm not going to do this or that or this', but you have to do everything on these trips. So I would say it made me more willing to put myself in a situation and deal with whatever comes. I would say that is a big thing, because it gives you a lot of self-confidence." (female, 65 years old)
Tolerance of others	"Maybe just seeing people in different roles has given me more tolerance to see other people in different roles." (male, 43 years old, cerebral palsy)	"This trip has been a good learning experience for me and has helped me learn patience a little better." (female, 25 years old)
Increased comfort meeting new people	"I am more comfortable meeting new people since the beginning of these trips, whether I can fully attribute that to WI, but I'm sure it played a role." (male, 27 years old, cerebral palsy)	I think they've (the trips) made me more comfortable meeting people. . . . I can specifically remember the first day of the first trip. I was so nervous, almost nauseated. It threw me into a situation where I didn't know anybody. That helped me and I learned about myself. If I can go into the wilderness with a group of complete strangers, I can certainly go to an interview or have coffee with someone I don't know."

Increased involvement with groups	"I have joined a support group and I am getting out and about more." (female, 45 years old, ataxia and post traumatic stress disorder)	"What WI did for me is group participation. I'm more of an individual. I'm going to start getting into more group activities, maybe a little more involvement with the community with projects I would see beneficial to be and the community . . . getting more involved—it kind of broke the boundaries." (male, 22 years old)
More relaxed; less perfectionistic	"I consider myself a perfectionist in certain things, and after the first trip, I realized that perfection cannot be a part of the wilderness experience! I wanted the chance for that in my everyday life." (male, 43 years old, cerebral palsy)	"I think I'm more easy going. I used to have my agenda and I used to be in the leader role. I take a much more laid-back approach. . . . I've been more relaxed." (female, 26 years old)
Increased sense of self-esteem and self-acceptance	I think I've come to a more healthy realization that this disability is a part of me. It's no bigger than any other part, but it is a part. And I need to acknowledge that, without being ashamed of it I mean, it's a part of me, it affects my personality and who I am, but I can't be embarrassed about that. Instead of trying to hide a part of myself from the whole of me, I have a greater acceptance that, . . . more of a willingness to deal with it on a real level. If that makes sense? (male, 27 years old, cerebral palsy)	"I feel confident on the trips, and I think some of that confidence has affected my self-esteem, helping build my self-esteem." (female, 26 years old)
Values clarification; help set priorities in one's life	"You are out there in the wilderness . . . you don't worry about watches . . . is your tie straight and that stuff. It helped me finalize priorities. It helped me focus on what my priorities are and what's important and what's not." (male, 27 years old, cerebral palsy)	"I have taken a new approach this year. It's called being selfish! I kinda realized through the WI trips that I'm a real giver. A lot of times, I don't take care of myself. This year, I've been making time for myself." (female, 34 years old)

Table 2.
Continued

Area of Personal Growth	Exemplar Quotes: Participants with Disabilities	Exemplar Quotes: Participants without Disabilities
Improved social skills/ interpersonal skills	"It made me more polite to other people. Being more mature with other people." (male, 30 years old, traumatic brain injury) "Well, I used to be shy, but I'm getting over that, too. It's getting better." (female, 41 years old, mental retardation)	"I had a conflict with one of member of the group and that has helped me think of ways to work with that member, not have so much conflict with them." (female, 34 years old)
Comfort in asking for and giving help	"I feel I am not shy in asking for help since I have been on these trips." (female, 45 years old, cerebral palsy)	"I don't feel strange helping Karen get dressed after going to the bathroom anymore or watch people get lifted into the canoe." (female, 24 years old)
Increased sense of well-being	"What's a real disability for me is the manic-depressive illness I have . . . being out here in the wilderness has been so great for me—it's really helped me. There is always something that needs to be done—and the group! That's good for me. The story of my life has been to start things and never finish any of them. . . . I can even get up (in the wilderness) in the morning. I don't feel like sleeping all day like I do at home." (male, 44 years old, mental illness)	"It was very good for me (the trip experiences) as it always is when I travel. I gained physical strength, a cheerful attitude, and the enjoyment of being around young people and their enthusiasm and energy." (female, 50 years old)

especially true. There were a couple of participants in particular I really liked a lot because of their innocence and non-malicious no-gains way of looking at the world and dealing with other people and things. That was inspiring to me in a way that I hadn't expected. Because I had that experience, I think it's something other people might have, too. (female, 34 years old)

Skill Development. Participants with and without disabilities cited many skills they developed over the course of the trip experiences. Skills learned included canoeing skills, camping skills, the skills to stay comfortable in harsh or uncomfortable conditions, disability accommodation skills, minimum impact skills, and safety skills. Participants with and without disabilities identified similar skills that they had acquired.

Personal Growth and Reflection. Participants with and without disabilities expressed many different ways the trip experiences had helped them grow personally and reflect on themselves and their lives. Participants without disabilities gained as much as or more than the participants with disabilities. Table 2 lists the numerous areas of personal growth experienced by participants and provides exemplar quotes that substantiate these changes, reported by both participants with and without disabilities.

Lifestyle Change. Most participants reported some changes in their lifestyle as a result of the trip experiences. The trips appeared to impact participants without disabilities more so than participants with disabilities. The qualitative data supported the quantitative results obtained from the follow-up interviews. Participants identified the following lifestyle areas as being affected most often: recreation; employment; education; mobility; planning/organizing one's life; and, desire for a more simplified lifestyle.

Conclusions

This study adds to the body of research indicating that integrated wilderness adventure programs result in positive changes for people with and without disabilities. The changes that were most central to this study were related to attitude, relationships/social integration, canoe skill acquisition, and perceived lifestyle change. The participants in this study were a voluntary sample, which helped explain the initial high positive attitudes toward people with disabilities. Assessing changes in global attitudes toward disability may not provide any useful information to researchers trying to understand social integration. Recalling that an attitude is a broad disposition to respond positively or negatively to a target object (Fiske & Taylor, 1991), in this case people with disabilities, it is only logical that people who sign up for wilderness trips with mixed ability groups would score high on a measure assessing global attitudes. In essence, they have already declared their positive attitude toward disability simply by registering for the trip. Perhaps a more powerful result of this study was that attitudes remained positive over time within both groups, even after spending several days together in challenging situations in a wilderness setting where those attitudes were 'put to the test.' The insights that participants gained, as reflected in the qualitative data, helped to possibly redefine their attitudes to a more individualistic and less stereotypic way of thinking about people with disabilities. In general, people in this study liked each other, and that interpersonal attraction grew as the study progressed.

The findings were promising in that not only were attitudes positive on a global level, but participants were making choices to include people with disabilities in their lives as friends. The fact that the individual choice status (i.e., sociometric assessment) for almost every participant increased from baseline to the end of the study was a powerful

finding. It supports the need and effectiveness of having people share time and recreation experiences together in integrated programs.

Participants with disabilities also demonstrated a significant gain in canoe skills over time. Although this was the only skill measured objectively, participants reported gains in a myriad of other skills, many of them related to successful daily living. Outdoor pursuits, such as wilderness canoe trips, appear to be an ideal medium where people with disabilities gain and use skills due to the complexity and functionality of the recreation setting.

Lastly, participants with and without disabilities reported many other positive lifestyle changes that were, at least in part, impacted by their participation in the integrated outdoor adventure program. This supports the earlier research by McAvoy et al. (1989). For participants with disabilities, social activity and interpersonal relationships were most impacted. For participants without disabilities, employment, recreation, and tolerance of stress were most impacted. However, all life areas showed some positive impact for both groups.

The authors believe that the longitudinal nature was the strength of this study, as it provided a rich data set. Limitations of this study must be considered in relation to the results. First, the sample size was relatively small. It was difficult to keep the two groups intact over the 2 ½ years of the study. Therefore, of the 26 participants in the sample, only 17 were able to be assessed consistently over time. Also, the intrusion of the research tasks on the trips may have changed the awareness and behavior of participants. However, the longitudinal nature of the study may have helped counteract this limitation.

Future research points to the need to study a larger sample size. Also, further research is needed to investigate the mediating factors of integrated outdoor adventure experiences. This study looked at the outcomes from participation. But what is it about the integrated wilderness experience, specifically, that is growth-producing for people? Understanding what variables or qualities actually help to create change for participants in outdoor adventure programs will lead to more effective programs and better use of scarce and fragile wilderness areas.

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